

Abstract

To present a reaction system that efficiently catalyzes an enantio selective asymmetric nucleophilic addition reaction of an  $\alpha$ -iminophosphonic acid ester. An optically active  $\alpha$ -amino- $\gamma$ -oxophosphonic acid derivative is produced through an asymmetric  
5 addition reaction of an  $\alpha$ -iminophosphonic acid ester and a nucleophilic agent (for example, a silyl enol ether).